What we claim is:

1. A method of fabricating an electronic device formed on a semiconductor wafer, said method comprising the steps of:

forming a layer of a first material over said substrate, said first material is oxygen-sensitive;

forming a photoresist layer over said layer of said first material;

patterning said layer of said first material;

removing said photoresist layer after patterning said layer of said first material; and

subjecting said semiconductor wafer to a plasma which incorporates a gas which includes hydrogen or deuterium so as to remove residue from said first material.

2. The method of claim 1, wherein said step of removing said photoresist layer is performed by subjecting said semiconductor wafer to said plasma which incorporates a gas which includes hydrogen or deuterium.

3. The method of claim 1, wherein said step of removing said photoresist layer is performed by subjecting said semiconductor wafer to a higher temperature step which is conducted in a hydrogen ambient with a plasma impinging upon said semiconductor wafer.

4. The method of claim 3, wherein said higher temperature is around 245 °C.

5. The method of claim 1, wherein said gas additionally includes a forming gas.

6. The method of claim 5, wherein said forming gas is comprised of a gas consisting of: argon, nitrogen, and any other inert gas.

7. The method of claim 1, wherein said first material is comprised of a conductive material.

8. The method of claim 7, where said first material is selected from the group consisting of: copper, tantalum, titanium, titanium nitride, tungsten, tungsten nitride, aluminum, copper-doped aluminum, silver, gold, and any combination thereof.

9. A method of forming a conductive feature comprised of an oxygen-sensitive material over a semiconductor substrate for an electronic device, said method comprising the steps of:

forming a conductive layer over said semiconductor substrate, said conductive layer comprised of said oxygen-sensitive material;

forming a photoresist layer over said conductive layer, said photoresist having a pattern so as to expose portions of said conductive layer;

removing said exposed portions of said conductive layer so as to form said conductive structure; and

subjecting said semiconductor wafer to a plasma which incorporates a gas which includes hydrogen or deuterium.

10. The method of claim 9, wherein said oxygen-sensitive material is comprised of copper.

11. The method of claim 9, wherein said oxygen-sensitive material is comprised of tungsten.

12. The method of claim 9, wherein said oxygen-sensitive material is comprised of tungsten nitride.

13. The method of claim 9, wherein said oxygen-sensitive material is comprised of tantalum.

14. The method of claim 9, wherein said oxygen-sensitive material is comprised of titanium.

15. The method of claim 9, wherein said oxygen-sensitive material is comprised of TiN.

16. The method of claim 9, wherein said oxygen-sensitive material is comprised of aluminum.

17. The method of claim 9, wherein said oxygen-sensitive material is comprised of copper-doped aluminum.

18. The method of claim 9, wherein said oxygen-sensitive material is comprised of silver.

19. The method of claim 9, wherein said oxygen-sensitive material is comprised of gold.

20. A method of fabricating a conductive interconnect for providing an electrical connection between a first conductor and a second conductor for an electrical device formed in a semiconductor substrate, said method comprising the steps of:

forming a dielectric layer on said first conductor, said dielectric layer having at least one opening which exposes said first conductor;

forming a layer of an oxygen-sensitive material on said dielectric layer, said oxygen-sensitive material substantially filling said opening in said dielectric layer and for providing an electrical contact to said first conductor;

forming a photoresist layer on said oxygen-sensitive material, said photoresist layer having a pattern so as to expose portions of said oxygen-sensitive material;

removing said exposed portions of said oxygen-sensitive material on said dielectric material, said removal step causing a residue to be formed on exposed surfaces of the remaining portions of said oxygen-sensitive material; and

removing said photoresist layer by subjecting said photoresist layer with a hydrogen-containing gas incorporated into a plasma.

21. The method of claim 20, wherein said oxygen-sensitive material is comprised of a material selected from the group consisting of: copper, tungsten, tungsten nitride, tantalum, titanium, titanium nitride, aluminum, copper-doped aluminum, silver, gold, and any combination thereof.

22. The method of claim 20, further comprising the step of:

removing said residue by subjecting said residue to a fluorinated etchant.

23. The method of claim 21, wherein said fluorinated etchant is comprised of CF_4.

24. The method of claim 21, wherein said fluorinated etchant is comprised of CHF_3.